



International Foundation for
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Know Thy Laxatives: A Parent's Guide to the Successful Management of Chronic Functional Constipation in Infants and Children

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Know Thy Laxatives: A Parent's Guide to the Successful Management of Chronic Functional Constipation in Infants and Children

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Constipation remains one of the most common intestinal problems affecting children – and a source of bewilderment and worry for many parents. Fortunately, most constipation in infants and children is not caused by any serious underlying medical disease. The challenge, therefore, is for parents to manage constipation, guided by an understanding of why their child experiences difficulties when evacuating stool. Familiarity with the many products available will help them manage the problem effectively. A basic awareness of the developmental stages leading to successful toilet training can help avoid many crises. Early intervention can minimize the chances of “stool withholding” and its most dreaded consequence: involuntary soiling of the underpants, also known as *encopresis*. We will briefly review some of these agents, their indications, and possible side effects.

Definition

Constipation can be defined as the passage of painful stools or a reduction in frequency. Note that this definition includes a child even if he has a daily movement, because an important feature is the *perceived* difficulty in passing the stool. A child can feel constipated even if the stool is soft. Most children tend to get constipated at the time of toilet training, between age 2 and 4 years. In healthy children, the number of bowel movements changes with age and diet. Infants may average four bowel movements in the first few weeks of life. Some healthy, exclusively breast-fed infants may have a bowel movement every 10–14 days (or longer) without any reason for concern. By the age of 4, bowel movements will average one each day.

How common is constipation?

It has been estimated that 10% of children are brought to medical attention because of a defecation disorder. Constipation is the chief complaint in 3% to 5% of all visits to pediatricians.

Straining and grunting in an infant: recognizing dyschezia

Dyschezia (Greek for abnormal evacuation) is often confused with constipation. It is actually a manifestation of discoordinated function of the muscles involved in expelling gas or a bowel movement. Because of immaturity, the anal sphincters will not relax at the same time that contractions of the colon muscles are trying to push its contents forward. Typically, the infant grunts and strains, turns red, and seems in pain. Eventually, a soft stool or gas is passed, and the

discomfort resolves...until next time. The straining is caused by the attempts to overcome the pressure build-up and to successfully overcome the anal spasm. Parents can help by gently flexing the child's hip, bringing the child's knees to his chest and, in some instances, by stimulating the rectum with a lubricated Q-tip. This dyschezia can be troublesome, but reassurance and simple measures are all that is needed until it resolves, usually by the time the baby is 4–6 months old.

When constipation becomes chronic

Acute constipation is usually the result of a drastic change in diet and fluid intake, disruption of usual toileting routines, or pain avoidance as a result of anal irritation, fissuring, or rashes. Correction of the underlying trigger will solve the problem and the usual stooling pattern will resume. For some children, however, the experience of pain on evacuation becomes a powerful reason to avoid having a movement the next time the urge is felt. Withholding behavior is quite typical and parents should recognize it for what it is: an attempt to keep the stool *in* so as to avoid pain. The child is *not* trying his best to push hard and have a movement. Quite the opposite: the stiffening, sweating, turning red, and holding on to furniture are the outward expressions of the concentration needed to squeeze the pelvic muscles and the external sphincter in order to force the stool back up and relieve the sensation of urgency. Often this withholding takes the form of a peculiar posturing (sometimes in a corner), standing on the tiptoes, or wiggling around. Avoiding the development of chronic constipation is important since it will prevent the overstretching of rectum and the loss of internal sphincter control, which can eventually result in involuntary seepage of stool into the underpants (*encopresis*).

Some important medical conditions causing chronic constipation

Most chronic constipation is *functional*, meaning there are no serious medical or structural abnormalities such as a blockage or inflammation. But certain conditions can be the source of the problem and will be considered and investigated by your physician whenever indicated. In infants and children, *anal and rectal anomalies* such as imperforate anus, anal narrowing, or an anteriorly misplaced anus (especially in girls) can interfere with the normal passage of stool; these might not be apparent until solids are introduced. *Spinal cord abnormalities* or lesions can affect the nerves responsible for sphincter control. Children with spina bifida,

tethered cord, or spinal cord tumors can suffer from serious constipation. Under these circumstances, difficulties with urination are usually also present. *Hirschsprung's disease* (aganglionosis) is a relatively rare (1:5000) condition caused by the absence of nerve cells in the intestine. It always affects the internal anal sphincter and extends before it to varying degrees, sometimes even involving the whole colon and parts of the small bowel. In the large majority of patients it presents as intestinal obstruction in infancy; no more than 1% of chronic constipation in older children is caused by Hirschsprung's disease. Constipation is a prominent feature in muscle and nerve disorders such as *neuronal dysplasia* or various forms of *pseudo-obstruction syndromes*. The possibility of an endocrine problem (including hypothyroidism or hyperparathyroidism) needs to be considered and can be ruled out with easily available tests. Finally, it is important to consider whether the child is being given any medication that might be contributing to the problem. For example, certain magnesium-containing antacids, painkillers with morphine, or codeine derivatives are well known constipating agents.

The guiding principles in the management of constipation

Functional constipation can be successfully managed in most children. The main components of a treatment plan include:

1. Parental education and understanding of the factors at play
2. Maintenance of soft and well lubricated stools
3. Avoidance of the pain associated with the passage of stool by good care of the perianal skin
4. Establishment of normal toileting routines

Uses and abuses of laxatives

When dietary modifications and optimal fluid consumption have been addressed but fail to solve the problem, the use of agents aimed at maintaining a soft stool or promoting a bowel movement by stimulating the intestines becomes necessary. Parents often voice their concern about the long-term effects of laxatives. Fortunately, there is a wide range of products, and their safety record is excellent. Laxatives can be abused, no doubt, but this occurs rarely when parents are in charge of their administration and there is regular monitoring by the health care provider. For this reason, laxative abuse in the context of adolescent eating disorders will not be included in this review.

Not all laxatives are created equal

Because functional constipation can result from small, over-dried, pellet-like stools; by sluggish or difficult propulsion along the colon; or by longer than normal retention of the stool in the rectosigmoid, the need to choose a laxative that fits the individual situation is of paramount importance. It is

not enough to want to administer a stool softener or a bulk supplement; we need to consider the child's ability to take a particular product and work around her preferences and sensitivities. Children can be extremely stubborn when it comes to accepting "medicines," even if we try hard to convince them that the sticky juice or syrupy liquid at the tip of that spoon is a natural fiber and good for them! The challenge is to find the best suited product that works for *your* child given in the most effective form of administration.

Laxatives can be classified in 4 broad categories:

1. Bulking agents
2. Lubricating agents
3. Osmotic laxatives
4. Stimulant laxatives

Fiber is the best example of a bulking laxative. By definition, fiber is a non-absorbable complex carbohydrate. It can hold on to water and maintain a softer and larger stool that is easier to pass. Many products contain processed husk from psyllium (e.g., Metamucil, Konsyl), others are based on methylcellulose, a synthetic fiber (e.g., Citrucel). Complex, non-absorbable starches such as calcium Polycarbophil (e.g., Fibercon, Equalactin) are also quite popular and can be administered in caplet form (available also for some of the products previously mentioned), an advantage in the older child and adolescent who prefers this to liquid products. Lubricating agents are based on mineral oil, and are not as commonly used as they were in the past. Remember that mineral oil does not get absorbed from the intestine: it is not a form of digestible fat (and need not be included in the calorie count). It provides lubrication and disperses the stool, preventing it from becoming compacted and dry. A popular combination of fiber and mineral oil in emulsion form is available (e.g., Kondremul). Many prefer it to plain mineral oil because it can be mixed in other fluids, while the plain oil tends to separate from juices or milk and is not very pleasant to take directly from the spoon. Another popular stool softener is docusate sodium (e.g., Colace, Laxinate 100).

An *osmotic laxative* is one that promotes the accumulation of water in the intestinal tract, thus preventing drying of the stool, promoting a more rapid transit. The most commonly used laxatives in this category are various non-absorbable magnesium salts (milk of magnesia, magnesium citrate) or MiraLax as well as similar generic products which contain another non-absorbable product, polyethylene glycol 3350 (PEG). This is the same ingredient in laxatives used (in much larger volumes) before a colonoscopy. Because MiraLax has none of the salt present in the colonic cleansing solutions, it is easily mixed in any fluid (juices are particularly effective), and is practically devoid of flavor or smell. It is not surprising that it has become a favorite among pediatricians and gastroenterologists.

Study looks at PEG 350 safety in children

The US Food and Drug Administration (FDA) initiated a research study in September 2014 to look at the safety of PEG 3350 laxative products in children, noting that there is little data on its absorption in children, especially in the very young and chronically constipated.

None of the products mentioned so far can be “abused” and none carries any long-term side effects. One note of clarification regarding mineral oil: the fear of vitamin deficiency is unfounded. Studies have never shown any noticeable impact on the levels of fat-soluble vitamins in children or adults taking mineral oil even for long periods of time. The concern was based on the notion that the mineral oil would interfere with absorption of the vitamins in food and rob the body of these important nutrients. This is not the case.

The final class of laxatives is stimulant agents. They are either derivatives of the senna leaf (Senokot) or alkaloid chemicals such as bisacodyl (e.g., Correctol, Dulcolax). They work by directly signaling the muscles and nerves of the intestine to contract and expel its content. They work faster than bulking agents and softeners but tend to produce more cramps. With continued regular use, the stimulating effect diminishes and higher doses are needed to produce the same level of stimulation and effectiveness. We tend to avoid long-term use of stimulant laxatives in children mainly because osmotic and bulking agents work so well and are less likely to cause severe cramping. Furthermore, childhood constipation is often caused by active stool withholding prompted by fear of passing a painful wide and hard movement. In this setting, stimulating the colon is counterproductive as it forces the child to evacuate a painful mass contributing to the aversive conditioning.

Most common side-effects of laxatives

The most common side effects of laxatives are excessive gassiness, bloatedness, and crampy abdominal pains. These complaints can be minimized by slow introduction of the fiber-containing laxatives, allowing the large intestinal flora to adjust to the change, and adapting to the increased gas formation that occurs naturally when fiber is consumed. The cramps experienced during the administration of stimulant laxatives are best managed by a trip to the bathroom and successful passage of a stool. In fact, we will often use a short course of a stimulant laxative when attempting to establish toileting routines in children who get too distracted and need a more effective reminder that it is time to have a movement.

The keys to success: individual treatment and flexibility

Choosing the right laxative for your child will depend on the individual features of his constipation, his age, and the

circumstances at the onset of the problem. The response to your intervention needs to be followed up closely, and adjustments will be made based on initial results. Doses are adjusted up or down, bulking agents experimented with, and toileting routines instituted with sensitivity, avoiding any coercion or unnecessary stress. Flexibility – the ability to change course and to adjust agents and amounts – is key to the judicious use of laxatives. Recognizing the presentations of constipation in children and intervening early goes a long way, and helps avoid the frustrations and power plays that can arise between parents and children during this crucial stage of their development.

More by this author

Levy J. My Tummy Hurts: A Complete Guide to Understanding and Treating Your Child’s Stomachaches. Simon and Schuster: 2004.

Suggested Reading

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